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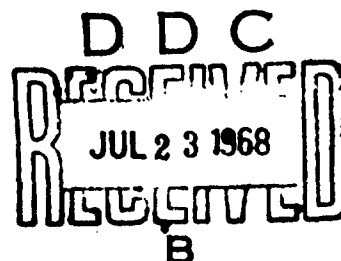
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ON THE LONGEVITY OF BACTERIUM CRYZAE (U. et I.) NAKATA
UNDER SOME CONDITIONS

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No. 16, October 1956, Page 112

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I. INTRODUCTION

In order to investigate the bacteria's survival through winter as well as the mechanism of infection as fundamental objectives, the authors applied cultivated bacteria as well as bacteria surviving on the damaged leaves to all varieties. The effects on survival were investigated and two or three of the results will be reported.

II. PERIOD OF SURVIVAL IN VARIOUS MEDIA

Sandy soil from the area of outbreak, decomposed rice straw compost, river sand, and powdered rice straw were packed in tubes as media and after sterilization, the bacteria were transferred on July 15th and placed indoors for seven days. Growth - no growth observations were made monthly on potato agar.

(2) (1) 経過(月)		8	9	10	11	12	1
(3)	培養地土	x	x	x	x	x	x
(4)	粉田土肥	o	o	o	o	o	o
(5)	河砂	x	x	x	x	x	x
(6)	粉田土	o	o	o	o	x	x

(7) 備考 o 生存 x 死滅

- 1) Observation (month)
- 2) Procedure
- 3) Soil From Area of Outbreak
- 4) Rice Straw Compost
- 5) River Sand
- 6) Rice Straw Powder
- 7) Note: o - growth x - no growth

III. PERIOD OF BACTERIAL SURVIVAL IN DAMAGED LEAVES, UNHULLED RICE AND COMPOST

The pot was inbedded in the ground and handled in the following manners:

- (1) Soil and damaged leaves mixed and placed outside.
- (2) Water was added to (1) like a wet field.
- (3) Damaged leaves piled onto the soil surface.
- (4) Damaged leaves stored indoors.
- (5) Placed indoors after culturing on unsterilized compost.
- (6) (5) was used as sterilized bacterial medium.
- (7) Damaged unhulled rice stored indoors.
- (8) Bacterial detection from the water in (2).

On November 11, uniform portions from the above eight divisions were sampled, filtered, centrifuged at 3000 r.p.m. for 10 minutes; sterile water added to the precipitate and the Kamiyama variety was inoculated at two places per leaf by means of a multiple needle device. Examinations were made 28 days later and the outbreak rate noted for each division on the average from 50 inoculations.

(2) 試行		I	II	III
1	試行	62.1	71.1	66.6
2	試行	64.9	69.6	67.3
3	試行	62.6	43.6	53.1
4	試行	97.6	98.8	98.2
5	試行	21.6	38.6	30.1
6	試行	46.3	46.4	46.4
7	試行	81.2	85.2	83.2
8	試行	48.9	60.0	84.5

- 1) Trials
- 2) Procedure

IV. PERIOD OF BACTERIAL SURVIVAL UNDER DRY CONDITION INDOORS

After one cc of sterile water was added to five-day-old culture slant, two platinum loopfuls were taken, air dried on a watch glass, placed in a room, removed after a prescribed period and 0.5 cc of sterile water added. After inoculation, the previous procedure was followed. The results from an average of two trials were as follows: immediately after (inoculation) August 12, 99.3% ; after two days, 42.5% ; after 5, 9 and 15 days, 0.0%.

V. PERIOD OF BACTERIAL SURVIVAL IN MOIST ROOM

Using the same procedures as described under dry conditions indoors, a suspension of bacteria in solution was kept in a moist room and inoculations made as is. Inoculations were made on October 1 on stopped leaves, second and third leaves. Subsequently, similar procedures as previously used were followed. The average blight occurrence rate on the three sections were as follows:

(1) 時間	(4) 止葉	(5) 第1葉	(6) 第2葉
(2) 直後	99.0	96.5	97.5
3 H (3)	44.2	63.6	100.0
4 H	62.8	68.1	100.0
6 H	56.8	66.6	—
10 H	24.2	35.4	53.3
15 H	4.6	11.2	27.3

- | | |
|----------------------|-------------------|
| 1) Time | 4) Stopped leaves |
| 2) Immediately After | 5) Primary Leaf |
| 3) Days | 6) Secondary Leaf |

VI. SUMMARY

1. It was determined that bacteria were viable for 6 months with rice husk as nutrient and 4 months with rice husk powder as medium for the blight bacteria. Furthermore, it was seen that the increase in bacterial growth in the organic material occurred 2 or 3 days after that of the potato broth.

2. After one month of being unattended, the existence of bacteria on damaged leaves was detected and was especially concentrated on those stored indoors. Next, the existence of bacteria was detected in the water, when damaged leaves were kept under wet-land conditions and detected even on damaged unhulled rice.

3. It appeared that around August, the bacteria began decreasing after two days under dry condition indoors.

4. During October, the bacteria were detected beyond 15 days under moist conditions indoors. However, it is thought that after 10 days they rapidly decreased.